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EXAMINER

LEUNG, WAI LUN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/785,617	Applicant(s) LOOK, CHRISTOPHER M.	
	Examiner DANNY W. LEUNG	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-15, 17-20, 22, 27-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-15, 17-20, 22, 27-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20100812</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 13-15, 17-20, 22, 27-29, and 31 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12-15, 17-20, 22, 27-29, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 13 requires “a configuration table to determine **which WSM** sent the interrupt” on lines 14-15. However, only **one WSM** “a wavelength switch module (WSM)” is described in claim 13 (lines 2-7), and also “the WSM” (*singular form*) in lines 8, 9, 12, 14, 16, and 18 in claim 13.

It is unclear as to what is meant by “*to look up a configuration table to determine which WSM sent the interrupt*” when there is only one WSM in the claimed embodiment. As it is best understood by the examiner, this configuration table is a 1x1 table that contains the only one WSM that is possible to send an interrupted signal.

5. Independent claims 18 and 27 has the same problem and are rejected for the same reasons as claim 13.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13, 15, 17, 18, 20, 22, 27, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roorda et al.** (2002/0186432A1) in view of **Lee et al.** (US 20040151497A1).

Regarding claims 13 and 27, **Roorda** discloses A apparatus (*fig 4*) comprising:

a wavelength switch module (WSM) (*fig 4, WSS 10*) comprising

a plurality of input ports (*fig 4, input ports on the left*) ,

a plurality of output ports (*fig 4, output ports on the right*), and

a plurality of channels, each coupling a distinct one of the plurality of input ports to a distinct one of the plurality of output ports, wherein a distinct wavelength is designated to a respective one of the plurality of channels (*fig 4, this is inherent property of a Wavelength Selective Switch 10*);

an optical transceiver (*fig 4, transceiver sub-system 11*), detachably coupled to the WSM, to send a first optical signal to the WSM and to detect a second optical signal received from the WSM after sending the first optical signal (*paragraphs*

72, the transceiver sub-system 11 has Transmitter to send a first optical signal and a receiver to detect a second optical signal received from the WSS 10).

Roorda does not disclose expressly wherein the optical transceiver comprises an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM, and wherein the WSM is operable to send an interrupt in response to detection of a change in the first optical signal received from the optical transceiver; and
a set of one or more processors coupled to the WSM to look up a configuration table to determine which WSM sent the interrupt, to look up a physical location table to determine which port of the WSM identified is affected, and to automatically determine whether the second optical signal corresponds to the first optical signal in response to the identification from the optical transceiver and the interrupt from the WSM.

Lee from the same field of endeavor, teaches a known technique of using an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM (*paragraphs 57-62, pattern generators 300 put an identification pattern '00' '01' '10' '11' into the optical signal sent by LD 110 to each of the WSM 50, a second signal is detected by photodiodes 80*) and

wherein the WSM is operable to send an interrupt in response to detection of a change in the first optical signal received from the optical transceiver (*paragraphs 59-60, detectors 310-1 determine if the data pattern in the first optical signal is changed (i.e. different from an expected value in the*

predetermined switching table), which indicates the WSM is operably sending an interrupted signal (i.e. there is an erroneous path in the WSM and needs to be corrected)); and

a set of one or more processors (*fig 8, comparator 140*) coupled to the WSM to look up a configuration table to determine which WSM sent the interrupt (*As it is best understood in view of the above 112 problems, since there is only one WSM, it is inherent that the comparator 140 determine which WSM sent the interrupt (there is only one WSM sending the erroneous signal) by using a 1x1 configuration table, (paragraphs 60)), to look up a physical location table to determine which port of the WSM identified is affected (paragraphs 59, the comparator 140 can compare the switching information with a predetermined switching table stored in the switching-table unit 160 to determine which port of the switch needs to be corrected (paragraphs 52)), and to automatically determine whether the second optical signal corresponds to the first optical signal in response to the identification from the optical transceiver and the interrupt from the WSM (the input/output data pattern is compared with a predetermined switching table paragraphs 59-60).*

Therefore, it would have been obvious for a person of ordinary skill in the art at the time when the invention was made to use **Lee's** known technique of putting an identification onto the first optical signal by using an encoder in **Roorda's** optical transceiver to send with the first optical signal to the WSM, such that **Roorda's** WSM in

the base system would be operable to send an interrupt in response to detection of a change in the first optical signal received from the optical transceiver by applying **Lee's** known technique, where a set of one or more processors are coupled to the WSM to look up a configuration table to determine which WSM sent the interrupt, to look up a physical location table to determine which port of the WSM identified is affected, and to automatically determine whether the second optical signal corresponds to the first optical signal in response to the identification from the optical transceiver and the interrupt from the WSM. The result of which would have been predictable to one of ordinary skill.

The motivation for doing so would have been to provide a reliable and inexpensive implementation of wavelength-path-monitoring such that the faulty port of a faulty WSM can be identified (*paragraphs 14-16 of Lee*).

Claim 18 is rejected for the same reasons as stated above regarding claims 13 and 27, because **Lee** further teaches A system comprising:

an optical network including a plurality of optical fibers (*paragraphs 16, the WSM is to be used in an optical communication network, which inherently has a plurality of fibers*); and a first optical network node coupled to the optical network (*fig 8 shows a node that is coupled to an optical network via the input ports and the output ports*), and the first optical network node comprising a wavelength switch module (WSM) as discussed above regarding claim 13.

As to claims 15, 20, and 29, **Lee** further teaches wherein the optical transceiver in **the combination of Roorda and Lee's** system includes a decoder to check whether the

second optical signal includes the identification (*fig 8, pattern detection unit 350 receives detection signal from PD 80, (paragraphs 56), which would be in the transceiver module (Roorda's receive/transmit interface sub module 11) in the combination of Roorda and Lee's system*) .

As to claims 17, 22, and 31, **Lee** further teaches wherein the optical transceiver in **the combination of Roorda and Lee's** system comprises a light source, which is tunable to a wavelength designated to the channel (*fig 8, laser diodes 110, paragraph 30*).

8. Claims 14, 19, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roorda et al.** (2002/0186432A1) in view of **Lee et al.** (US 20040151497A1), as applied to claims 13, 18, and 27 above, and further in view of **Fee et al.** (US006980736B1).

Regarding claims 14, 19, and 28, the combination of **Roorda and Lee** discloses the system in accordance to claims 13, 18, and 27 as discussed above. **It** does not disclose expressly wherein the WSM includes a variable optical attenuator to vary power of the first optical signal before the first optical signal exits the WSM, and the optical transceiver includes a light detector to measure power of the second optical signal to determine whether the power of the second optical signal changes in response to the first optical signal.

Fee, from the same field of endeavor, teaches a known technique of verifying connectivity of a WSM by using a variable optical attenuator to vary power of the first optical signal before the first optical signal exits the WSM, and includes a light detector

to measure power of the second optical signal to determine whether the power of the second optical signal changes in response to the first optical signal (*col 11, ln 57-62, supplemental signal detector 420 can monitor the amplitude of the supplemental signals to report changes in signal level which indicate increased attenuation applied by the switch*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use a variable optical attenuator such as that of **Fee's** onto the combination of **Roorda and Lee's** system to vary power of the first optical signal before the first optical signal exits the WSM, such that the changes of the second optical signal in response to the first optical signal can be detected by measuring the power of the second optical signal as suggested by **Fee**. The motivation for doing so would have been to easily verify the integrity of the optical paths through and among optical switches, and the result of which would have been predictable to one of ordinary skill.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents and patents applications are cited to further show the state of the art with respect to optical switched modules in optical networks in general, and will be used to support the same grounds of rejections as stated above in the event that any traversal may arise:

(US-20020044315 or US-20020027689 or US-20040017967 or US-20040052524 or US-20020080438 or US-20040190905 or US-20040208574 or US-20070147835 or US-20020126342 or US-20040008989 or US-20030174659 or US-20020163683 or US-20030152390 or US-20020018265 or US-20050074236 or US-20020041409 or US-20060045520 or US-20060013585 or US-20090034965 or US-20020131120 or US-20020109882 or US-20040042796 or US-20020109879 or US-20020015209 or US-20090080881 or US-20080050117) or (US-20070230954 or US-20070237521 or US-20060269282 or US-20060056843 or US-20060013584 or US-20050196165 or US-20050163503 or US-20040208510 or US-20020097682 or US-20040028056 or US-20040153566 or US-20050108444 or US-20020021472 or US-20020114035 or

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US-20020012143 or US-20020093712 or US-20030123876) or (US-7076163 or US-7046928 or US-6980711 or US-6965735 or US-5978113 or US-5452115 or US-5319482 or US-4809361 or US-6580531 or US-5844702 or US-6920287 or US-4994675 or US-7079715 or US-6973269 or US-6983109 or US-6417944 or US-6369926 or US-6590681 or US-6504969 or US-7039316 or US-6934472 or US-6826368 or US-5488501 or US-6137927 or US-7146103 or US-6246511) or (US-6973228 or US-7174066 or US-6801679 or US-6332055 or US-5970201 or US-5867289 or US-5627925 or US-5708753 or US-7212739 or US-7151893 or US-6798991 or US-6704508 or US-6507421 or US-7035537 or US-6738581 or US-6583901 or US-7426347 or US-5682257 or US-5559624 or US-5537393 or US-7065268 or US-7317875 or US-6229788 or US-7155127 or US-6101014 or US-6671469 or US-5920414) or (US-6574018 or US-4845703 or US-7039318 or US-7242861 or US-6721502 or US-5777761 or US-6868232 or US-6433900 or US-5539564 or US-5495358 or US-5679987 or US-5296850 or US-6999677 or US-7526200 or US-7266297 or US-6871021 or US-6957018 or US-5896212 or US-5166926 or US-5157654 or US-5130984 or US-6466343 or US-7376348 or US-7099578 or US-H002075 or US-7533254 or US-7474851) or (US-7239773 or US-6804463 or US-7398018 or US-5144297 or US-5521732 or US-7326916 or US-6810214 or US-7433362 or US-6215763 or US-5502587 or US-5535373 or US-5347384 or US-7372804 or US-7042559 or US-6987899 or US-6101010 or US-7120356 or US-6980736 or US-7099582 or US-6128115 or US-6959126 or US-7394983 or US-7664397 or US-4451916 or US-6005696 or US-7224706 or US-6587236) or (US-6933852)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANNY W. LEUNG whose telephone number is (571)272-5504. The examiner can normally be reached on 10:00am-8:00pm Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DANNY W LEUNG
Examiner
Art Unit 2613

/D. W. L./
Examiner, Art Unit 2613
October 26, 2010

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613